

Work Order ID 75882

November-01-11 1:09:10 PM

75882

Page 1

Item ID: D350-591-121

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Heli-Access-Step, LH

Start Date: 01/11/2011 Start Qty: 4.00

4

Cust Item ID:

Required Date: 15/11/2011 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: M L J

Date: 11/11/01 Tooling:

Date:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D2351

Rev E

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and type labels as per PPP D350-591-121 CHG005

110

0.00

110

Large Fab

Large Fab

Memo

0.00

Large Fab

1-Cut D2244-116 extrusion to 55.32" long as per Dwg D2351 using cutting table setup DT8185-G

2-Drill extrusion per Dwg D2351 using Jig DT8230 for rivets.

3-Deburr

Split #1

5176714

11-11-09

4 φ

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 75882

75882

Page 2

November-01-11 1:09:10 PM

Item ID: D350-591-121

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Item Name: Heli-Access-Step, LH

Stop ***NS2***

Start Date: 01/11/2011 Start Qty: 4.00

4

Cust Item ID:

Required Date: 15/11/2011 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

CNC Bend 1

CNC Delta 100 Bender

BENDING MACHINE - SKIDTUBES

Memo

0.00

Bend as per Dwg D2351-041 using CNC Bender 1 and Folio FT011. Use Bend Program D2351-041.

DP 12-6-25 (4)

130

130

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

(4) 12-06-25

140

140

Large Fab

Large Fab

Large Fab

Memo

0.00

0.00

1-Bevel Fwd and Aft end for welding

2-Weld Aft End Bracket per QSI 004 & Dwg D2351 using Welding Jig DT8033
A/R Aluminum Rod 122130

3-Do not Grind Flush

1 12-07-09

1760

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 75882

November-01-11 1:09:10 PM

75882

Page 3

Item ID: D350-591-121

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Item Name: Heli-Access-Step, LH

Stop ***NS2***

Start Date: 01/11/2011 Start Qty: 4.00

4

Cust Item ID:

Required Date: 15/11/2011 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

QC9- Inspect visual per QSI004- Fusion Welds

0.00

150

QC

Memo

0.00

Quality Control

1 15 BE 12/07/09

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.00

Quality Control

5 12/16/09

1 16

170

Chemical Conversion Coat per QSI005 4.1

0.00

170

HandFinish

Memo

0.00

Hand Finishing

1 17 12-07-09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 75882

75882

Page 4

November-01-11 1:09:10 PM

Item ID: D350-591-121

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Hel-Access-Step, LH

Start Date: 01/11/2011 Start Qty: 4.00

4

Cust Item ID:

Required Date: 15/11/2011 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

QC3- Inspect Part Finish

0.00

180

QC

Memo

0.00

Quality Control

1x

12/07/10

190

Large Fab

0.00

190

Large Fab

Memo

0.00

Large Fab

1-Rivet Leg Assembly as per Dwg D2351

2-Weld Fwd End Plate per QSI 004 & Dwg D2351

A/RAluminum Rod 120854

3-Grind end cap flush per dwg D2351

1

φ

12.07.10

220

QC10- Inspect visual per QSI004- ground welds

0.00

220

QC

Memo

0.00

Quality Control

Sr/12/10

(+)
4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 75882

75882

Page 5

November-01-11 1:09:10 PM

Item ID: D350-591-121 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Heli-Access-Step, LH
 Start Date: 01/11/2011 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 15/11/2011 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 *230* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				X1 44			
240 *240* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00							
250 *250* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: 8:30 OVEN TEMPERATURE: 320 OF FINISH TIME: 9:00	0.00 0.00							

1 NB 12-7-11
 M-A
 1X Ø 12/07/11

M121841

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Backlist Print

Wednesday, November 09, 2011 11:12:32

Page 1

Work Order ID: 75882

Parent Item: D350-591-121

Parent Item Name: Heli-Access-Step, LH

Start Date: 11/1/2011

Required Date: 11/15/2011

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:E02.10.21Re-format; Incorporated D2351-041 IPPKJ/RF
IPP rev. F 06.02.23 added grinding EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN3-37A Bolt		Purchased	No				Each	2,072.0000	2	8	✓	20	
-----------------	--	-----------	----	--	--	--	------	------------	---	---	---	----	--

Location	Loc Qty	Loc Code
----------	---------	----------

ST353	68	
111668	1	
118628	67	
ST354	4	
117619	4	
ST518	2000	
119086	2000	

AN4-13A Bolt		Purchased	No				Each	1,291.0000	3	12	✓	20	
-----------------	--	-----------	----	--	--	--	------	------------	---	----	---	----	--

Location	Loc Qty	Loc Code
----------	---------	----------

ST357	1291	
118078	283	
118706	8	
118838	500	
119449	500	

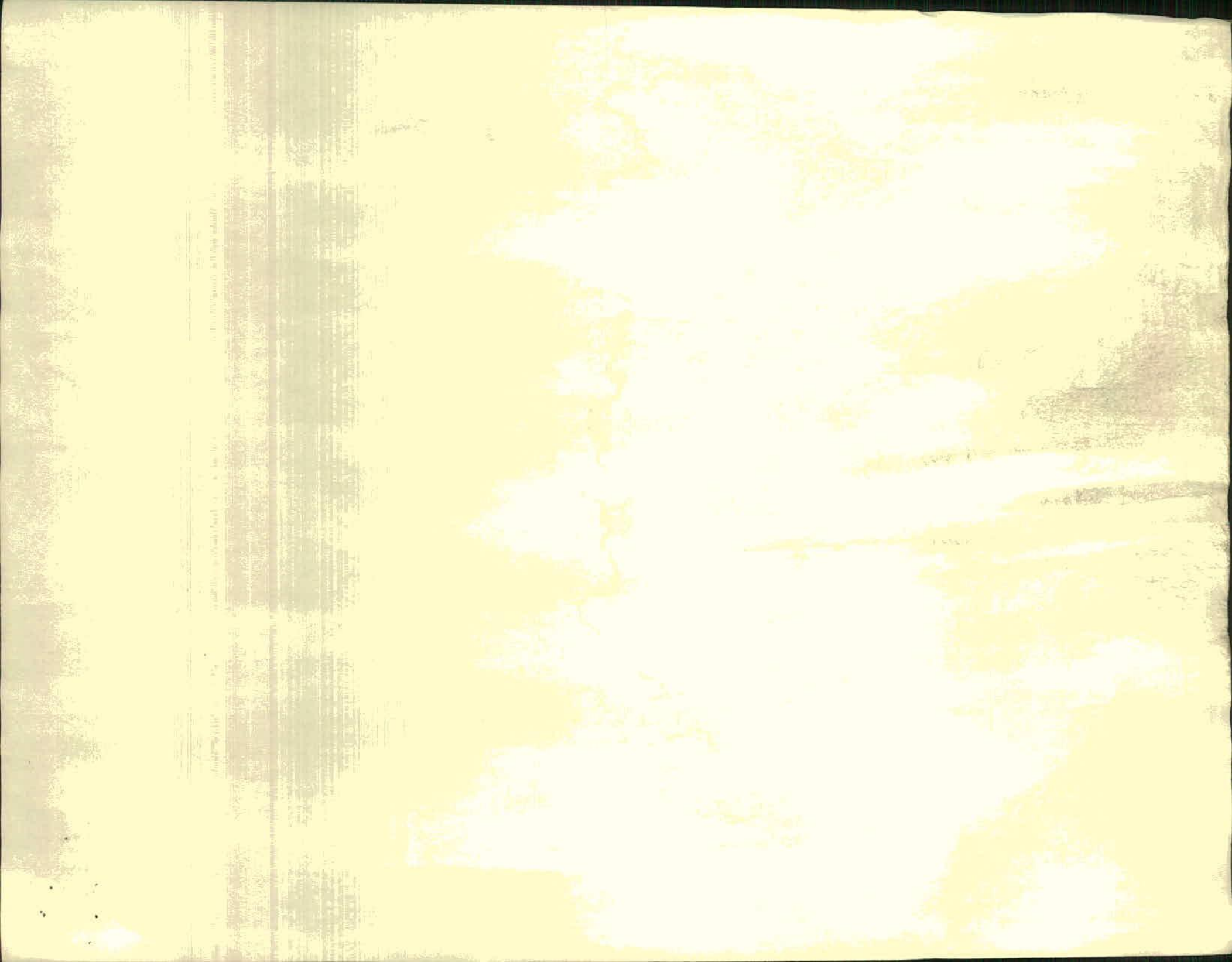
AN4-16A Bolt		Purchased	No				Each	98.0000	2	8	✓	20	
-----------------	--	-----------	----	--	--	--	------	---------	---	---	---	----	--

Location	Loc Qty	Loc Code
----------	---------	----------

ST358	98	
117872	48	
118838	50	

AN960JD10 Washer	NAS1149D0363J	Purchased	No				Each	0.0000	4	16	✓	20	
---------------------	---------------	-----------	----	--	--	--	------	--------	---	----	---	----	--

AN960JD416 Washer	NAS1149D0463J	Purchased	No				Each	0.0000	6	24	✓	20	12/07/11
----------------------	---------------	-----------	----	--	--	--	------	--------	---	----	---	----	----------



Picklist Print

Wednesday, November 09, 2011 11:12:32

Page 2

Work Order ID: 75882

Parent Item: D350-591-121

Parent Item Name: Heli-Access-Step, LH

Start Date: 11/1/2011

Required Date: 11/15/2011

Start Qty: 4.00

Required Qty: 4.00

D2230-1
Lug Manufactured No

Each 243.0000

1 84135 4 20

Location	Loc Qty	Loc Code
ST470	94	
72811	94	
ST476	149	
67826	6	
70974	3	
73398	140	

D2230-3
Lug Manufactured No

Each 143.0000

1 84133 4 20 12/07/11

Location	Loc Qty	Loc Code
ST476	4	
53881	4	
ST480	139	
70973	1	
73396	18	
74440	120	

D2244-116
Step Extrusion Manufactured No

Each 89.5600

4 11.11.09

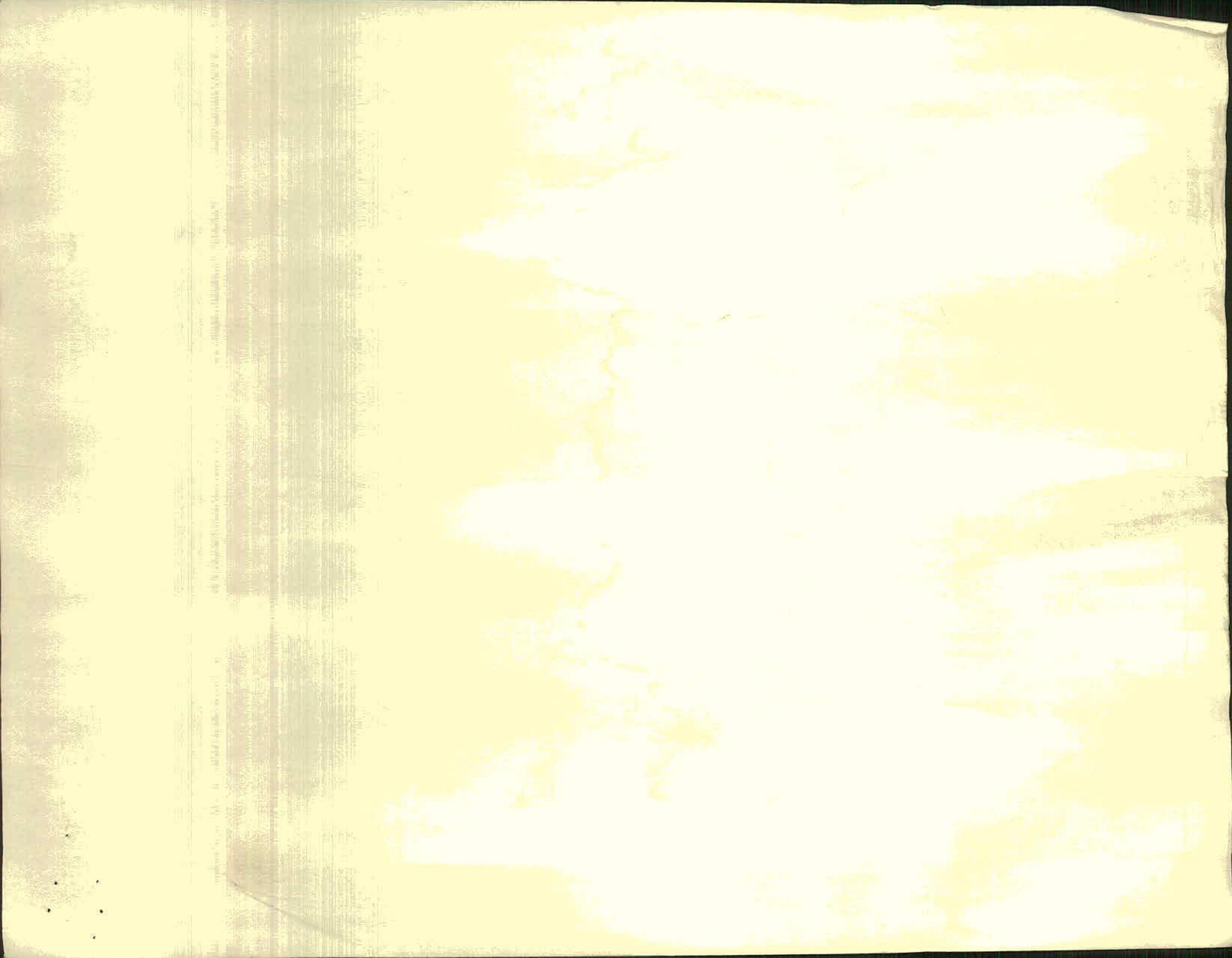
Location	Loc Qty	Loc Code
HALL	89	
60307	89	
WA	0.5	
60307	0.5	

D2582
Step Leg Assembly Manufactured No

Each 12.0000

4 12.07.09

Location	Loc Qty	Loc Code
WA	12	
72739	3	
72828	9	



Picklist Print

Wednesday, November 09, 2011 11:12:33

Page 3

Work Order ID: 75882

Parent Item: D350-591-121

Parent Item Name: Heli-Access-Step, LH

Start Date: 11/1/2011

Required Date: 11/15/2011

Start Qty: 4.00

Required Qty: 4.00

D2673-34
End Plate
Manufactured No Each 39.0000

4

12-07-10

Location	Loc Qty	Loc Code
WA <u>B84535</u>	19	
69534	19	
WA015	20	
59690	20	

1

D2732-030
Rubber Cushion
Manufactured No Each 4.0000

2 83560 8

20

Location	Loc Qty	Loc Code
ST409	4	
56515	0	
64283	4	

D2850-1
End Bracket
Manufactured No Each 3.0000

4

12-07-09

Location	Loc Qty	Loc Code
WA016 <u>B77101</u>	3	
68490	3	

1

D2856-400
Abrasion Strip
Manufactured No f 280.0945

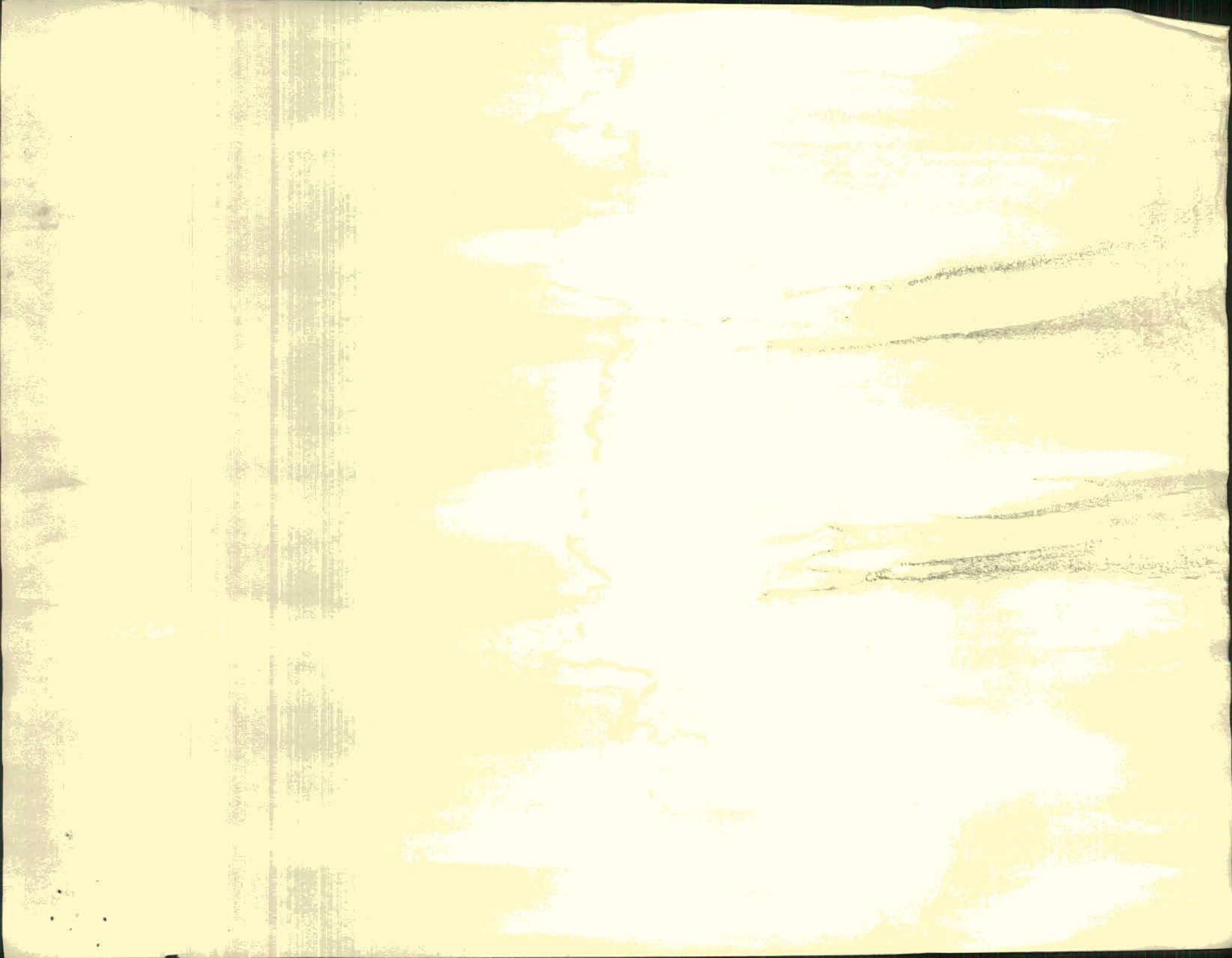
1

81875 0.24

20

12/07/11

Location	Loc Qty	Loc Code
ST403	0.3149	
68076	0.3149	
ST409	279.7796	
63735	0.6696	
71164	63.11	
73491	216	



Picklist Print

Wednesday, November 09, 2011 11:12:33

Page 4

Work Order ID: 75882

Parent Item: D350-591-121

Parent Item Name: Heli-Access-Step, LH

MS20600-AD4W3

Purchased

No

Each

1,313.0000

64

Cherry Rivets

Start Date: 11/1/2011

Required Date: 11/15/2011

Start Qty: 4.00

Required Qty: 4.00

12-07-10

Location	Loc Qty	Loc Code
GA 122151	880	16
118626	880	
ST321	300	
111636	48	
117505	217	
117601	35	
WA018	133	
107939	133	

MS21042L3

Nut

Purchased

No

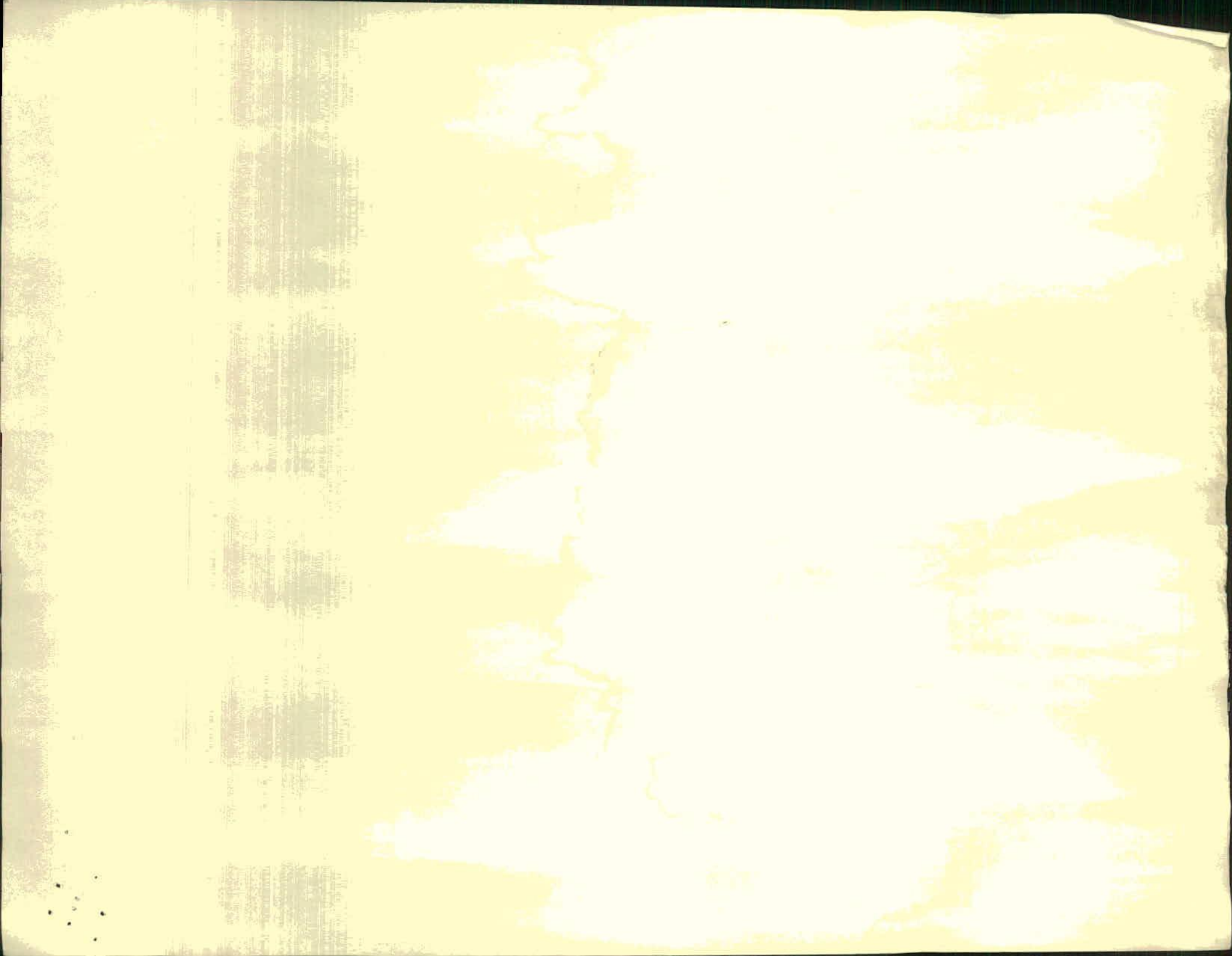
Each

9,307.0000

8

12/14/11 70 12/07/11

Location	Loc Qty	Loc Code
ST300	367	
117441	16	
117885	42	
118451	5	
118927	304	
ST516	6000	
119017	6000	
ST518	2940	
119075	2940	



Picklist Print

Wednesday, November 09, 2011 11:12:33

Page 5

Work Order ID: 75882

Parent Item: D350-591-121

Parent Item Name: Heli-Access-Step, LH

Start Date: 11/1/2011

Required Date: 11/15/2011

Start Qty: 4.00

Required Qty: 4.00

MS21042L4

Purchased

No

Each

12,448.000

Nut

3

121632

12

JB 12/07/11

Location

Loc Qty

Loc Code

ST300

1448

117441

51

117601

532

118451

133

118927

732

ST516

6000

119017

6000

ST518

5000

119075

5000

11/1/04
J. W. Wood



DESIGN KE	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SCALE NTS
A	95.02.15	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	98.12.17	CHANGED TO BEND, D2850 REPLACES D2357 & D2358, INCORP. DEO 9084	
E	05.11.14	UPDATE FINISHING NOTE	

D2351 HIGH FLOAT STEP ASSEMBLY PARTS LIST

Part No.	Description	QTY -041	QTY -042
D2351-041	High Float Step Assembly (LH)	X	
D2351-042	High Float Step Assembly (RH)		X
D2244-55.4	STEP EXTRUSION*	1	1
D2582	STEP LEG ASSEMBLY	1	1
D2673-34	STEP END PLATE	1	1
D2850-1	END BRACKET	1	
D2850-2	END BRACKET		1
MS20600AD4W3	RIVETS	16	16

*cut per drawing

75882 HLT
11/11/01

RELEASED
05.11.28 #

PH
ECN 1105
UNDER REVIEW
07.11.24
PER NICK 263

Copyright © 1995 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

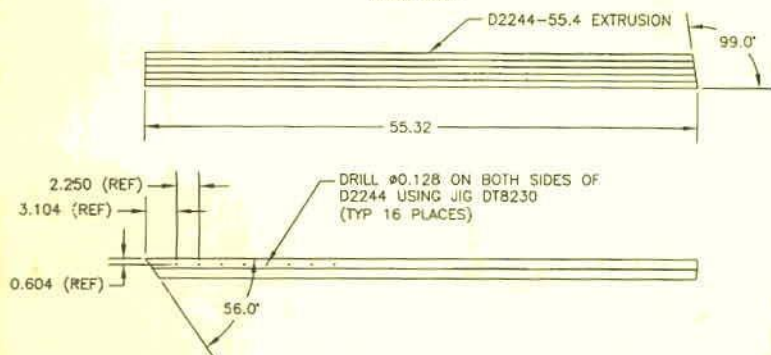
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

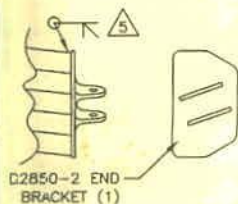
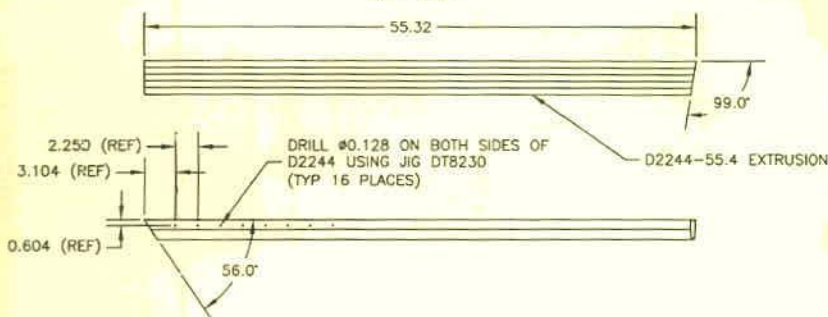
NOTE: Date & initial all entries

75802

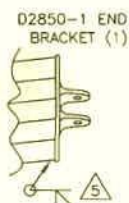
D2351-2 CUTTING/DRILLING DETAIL
RIGHT STEP



D2351-1 CUTTING/DRILLING DETAIL
LEFT STEP



DETAIL A
SCALE: 1:4



DETAIL B
SCALE: 1:4

D2582 STEP LEG ASSEMBLY (1)

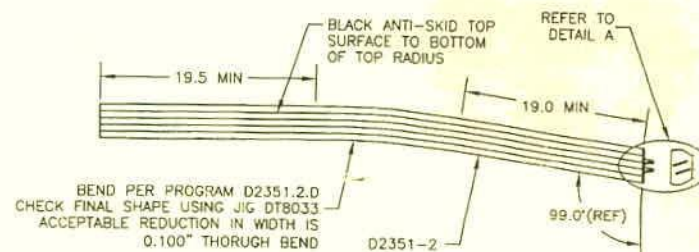


GENERAL NOTES

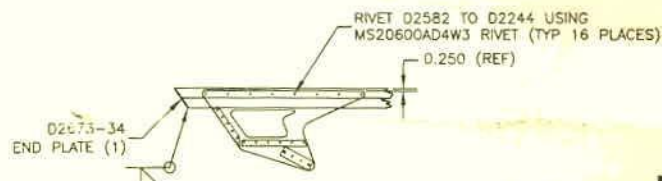
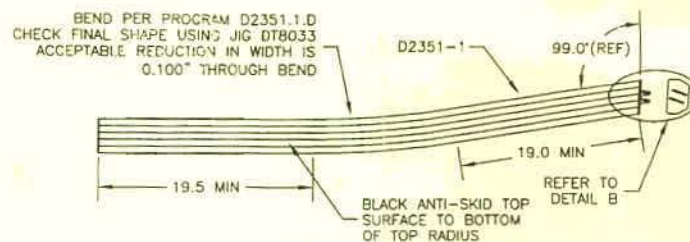
- 1) WELD PER DART QSI 004
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

CHAMFER D2244 EXTRUSION 0.075"x45' BEFORE WELDING D2850-1 OR D2850-2 IN PLACE. DO NOT GRIND FLUSH.

D2351-042 BENDING/ASSEMBLY DETAIL
RIGHT STEP



D2351-041 BENDING/ASSEMBLY DETAIL
LEFT STEP



RELEASED
05.11.28

UNDER REVIEW

COPYRIGHT © 1995 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN KE	DRAWN BY PH	DART	DART AEROSPACE LTD. HAMMERSLEY, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SHEET 2 OF 2 SCALE 1:12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries